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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,159	07/14/2003	Rolf Bruck	E-42069	6786

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EXAMINER

WACHTEL, ALEXIS A

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 09/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/619,159

Applicant(s)

BRUCK ET AL.

Examiner

Alexis Wachtel

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7-14-03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Detailed Action

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 33 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the use of a remote control, does not reasonably provide enablement for the use of a sensor for starting up the reformer by an operator of a vehicle before the operator enters the vehicle. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims.

3. Claim 34 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, it is not clear what structural limitations are implied by language of claim 34. Claim 34 as written is so incomprehensible as to preclude examination on the merits.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 23,28,29,30,35,36 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 99/65097.

With respect to claim 23, WO 99/65097 teaches a reformer installation for providing hydrogen-containing gas, comprising: at least one reformer unit (Fig.3, item 12); a feedline (Fig.3, line next to item 16) leading to said one reformer unit; a discharge line (Fig.3, item 32) leading from said at least one reformer unit and carrying an outgoing stream emerging from said at least one reformer unit; and a line (Fig.3, item 46) connecting said discharge line to said feed line and carrying an outflowing partial stream of said outgoing stream to said feed line, for at least partially forming a circulating stream.

With respect to claim 28: which further comprises a remote control (Fig.3, item 150) for remote controlled start up of the reformer installation.

With respect to claim 29: which further comprises a sensor for regulating said circulating stream (146,148).

With respect to claim 30: wherein said sensor is a temperature sensor (146,148).

With respect to claim 35: which further comprises a respective directional control valve (156) disposed in at least one of said feedline, said discharge line and said line.

With respect to claim 36: A reformer installation for providing hydrogen-containing gas during a starting phase of energy generation using a fuel cell, Comprising: at least one reformer unit (12); a feed line (Fig.1, item 22) leading to said at least one reformer unit; a discharge line (32) leading from said at least one reformer unit and carrying an outgoing stream emerging from said at least one reformer unit; a line

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(76) connecting said discharge line to said feedline and carrying an outflowing partial stream having a composition corresponding to a composition of said outgoing stream upon emerging from said at least one reformer unit; and a fuel cell (52) disposed in said line.

6. Claims 23,24 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4,539,267 to Sederquist.

With respect to claim 23, Sederquist teaches a reformer installation for providing hydrogen-containing gas, comprising: at least one reformer unit (44); a feedline (70) leading to said one reformer unit; a discharge line (72) leading from said at least one reformer unit and carrying an outgoing stream emerging from said at least one reformer unit; and a line (76) connecting said discharge line to said feed line and carrying an outflowing partial stream of said outgoing stream to said feed line, for at least partially forming a circulating stream, said outflowing partial stream having a composition corresponding to a composition of said outgoing stream upon emerging from said at least one reformer unit.

With respect to claim 24: Which further comprises a heating device (12) disposed in said line.

With respect to claim 26: wherein said heating unit is an electric heating device (12).

7. Claims 23,24 and 26 are rejected under 35 U.S.C. 102(a) as being anticipated by US 6,585,785 to Warren et al.

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With respect to claim 23, Warren et al teach a reformer installation for providing hydrogen-containing gas, comprising: at least one reformer unit (Fig.1, item 7); a feedline Fig.1, item 45) leading to said one reformer unit; a discharge line (Fig.1, item 6) leading from said at least one reformer unit and carrying an outgoing stream emerging from said at least one reformer unit; and a line (Fig.1, item 43) connecting said discharge line to said feed line and carrying an outflowing partial stream of said outgoing stream to said feed line, for at least partially forming a circulating stream, said outflowing partial stream having a composition corresponding to a composition of said outgoing stream upon emerging from said at least one reformer unit.

With respect to claim 24: Which further comprises a heating device disposed in said line (41).

With respect to claim 26: wherein said heating unit is an electric heating device (41).

8. Claims 23,24,26 are rejected under 35 U.S.C. 102(b) as being anticipated by GB2283235

With respect to claim 23, GB2283235 teaches a reformer installation for providing hydrogen-containing gas, comprising: at least one reformer unit (32); a feedline (34) leading to said one reformer unit; a discharge line (52) leading from said at least one reformer unit and carrying an outgoing stream emerging from said at least one reformer unit; and a line (52) connecting said discharge line to said feed line and carrying an outflowing partial stream of said outgoing stream to said feed line, for at least partially forming a circulating stream, said outflowing partial stream having a

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composition corresponding to a composition of said outgoing stream upon emerging from said at least one reformer unit.

With respect to claim 24: Which further comprises a heating device (53) disposed in said line.

With respect to claim 26: wherein said heating unit is an electric heating device (53).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/65097.

With respect to claim 27, WO 99/65097 does not teach a pump disposed in said line. Pumps are art recognized means of facilitating the flow of fluids through conduits, accordingly, it would have been an obvious matter of engineering choice to have provided said line, as disclosed by WO 99/65097 for the purpose of facilitating fluid flow.

11. Claim 25 is rejected under 35 U.S.C. 103⁹(b) as being anticipated by US 4,539,267 to Sederquist

Sederquist fails to teach using an additional reformer in said line. However, the use of an additional reformer would result with improved product yields and the reformer could concurrently function as a heat exchanger. As a result, one of ordinary skill would

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have replaced heater (12) with an additional reformer motivated by the desire to improve quality of reformat.

12. Claims 29,31,32 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,539,267 to Sederquist in view of US 6,455,181 to Hallum.

With respect to claims 29-32, Sederquist as set forth above fails to teach a sensor for regulating said circulating stream wherein said sensor is a substance concentration meter and more particularly a hydrogen concentration sensor. Hallum teaches the use of fuel cell system having a sensor wherein the sensor is used to detect the concentration of an anode gas (hydrogen) flowing in the fuel cell inlet and outlet streams. The sensor allows for a regulated flow of anode gas from a gas supply to the fuel cell such that a desired amount of anode gas is provided for to operate the fuel cell (Col3, lines 4-15). In view of this teaching it would have been obvious to one of ordinary skill to have provided the system disclosed by Sederquist with a concentration sensor disposed before a fuel cell anode gas space for the purpose of regulating anode gas flow.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alex Wachtel whose telephone number is 571-272-1455. The examiner can normally be reached on 10:30am to 6:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Glenn Caldarola, can be reached at (571)-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

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have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Glenn Caldarola
Supervisory Patent Examiner
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